



## **How can a modular Master Program in Hydrology provide a framework for future education challenges?**

Markus Weiler and Jens Lange

Institute of Hydrology, University of Freiburg, Freiburg, Germany (markus.weiler@hydrology.uni-freiburg.de)

A new Master program in Hydrology started at the University of Freiburg in 2008 as a continuation of the Diploma program in Hydrology due to the proposed changes according to the Bologna accord. This imposed formation provided a perfect opportunity to develop a new program that is able to meet the challenges of future hydrology students to work in a nonstationary world due to climate and land use change. A modular program with individual three week hydrological courses was established, which builds on a general bachelor knowledge in natural sciences. Besides broad theory, students are taught in all relevant methods of hydrological field data collection and laboratory analysis. Recurrently, practical data analysis is carried out using freeware software tools. Examples include time series analysis, (geo-)statistics and independently programmed water balance models including uncertainty assessments. Students work on data sets of different climatic zones and are made aware of hydrological problem areas around the globe. Hence, graduates know how to collect, analyse and evaluate hydrological information and may prepare their own, independent tools to predict future changes. In addition, the new modular program includes instructors from the industry and public authorities to provide the students a broad perspective of their future profession. Finally, the new program allows directly to teach university students and practicing hydrologists together to provide evolving methods in hydrology to the practitioners and to allow contacts to professional for the university students.